



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,459	12/10/2003	Dan Teodosiu	14917.0456USU1	8789
27488	7590	02/21/2008		
MERCHANT & GOULD (MICROSOFT)			EXAMINER	
P.O. BOX 2903			LY, CHEYNE D	
MINNEAPOLIS, MN 55402-0903				
			ART UNIT	PAPER NUMBER
			2168	
			MAIL DATE	DELIVERY MODE
			02/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/733,459	Applicant(s) TEODOSIU ET AL.	
	Examiner CHEYNE D. LY	Art Unit 2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-11,16-23 and 31-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-11,16-23 and 31-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: <u>1/15/08; 12/19/07; 9/24/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' arguments filed November 28, 2007 have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

2. Claims 1-3, 6-11, 16-23, and 31-42 are examined on the merits.

RESPONSE TO ARGUMENTS

3. The rejections of record have been withdrawn. Applicant's arguments directed to withdrawn rejections are moot.

IDS

4. The Sheet 2 of the IDS filed December 19, 2007 has been lined through because the list documents are not present in the instant file for consideration.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 6-8, 10, 11, and 34-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Shakib et al. (US 5787262 A) (Shakib hereafter).

7. In regard to claim 1, Shakib discloses a computer storage media storing computer-executable instructions that when executed perform a method comprising: receiving a first

fence value and first meta-data of a first member of a replica set (column 15, lines 5-10, e.g. change number (fence value), and time stamps (metadata), and column 16, lines 1-67, e.g. change number A8); comparing the first fence value with a second fence value of a second member of the replica set (column 16, lines 1-67, e.g. the change number of the winner copy is A8); determining whether the first fence value has precedence over the second fence value (column 16, lines 1-67, e.g. the change number of the winner copy is A8); changing content of the second member based on the determining (column 16, lines 1-67, e.g. determines which of the attached objects should be kept and which should be deleted); and changing second meta-data of the second member to indicate a change in the content of the second member and maintaining the second fence value unchanged (column 16, lines 23-30, e.g. D6, and column 20, lines 1-22, e.g. the change list has been changed by deleting the redundancy and the change number D6 remains unchanged).

8. In regard to claim 2, Shakib discloses the second fence value and the second meta-data is stored in a store separate from the content of the second member (column 20, lines 1-22, e.g. D6).

9. In regard to claim 3, Shakib discloses changing content of the second member comprises determining one or more differences between content on the first member and the content of the second member (column 15, lines 23-67, e.g. union of two predecessor change lists is simply a list of the largest change numbers from each replica).

10. In regard to claim 6, Shakib discloses the content on the second machine comprises file data and file attributes (column 3, lines 50-56, e.g. a folder contains documents).

11. In regard to claim 7, the first meta-data further comprises a first digest that summarizes the first resource and the second meta-data further comprises a second digest that summarizes the second resource (column 20, lines 1-15, e.g. T1, T3, etc.).

12. In regard to claim 8, Shakib discloses comprising comparing the first digest with the second digest and bypassing the changing the content of the second member if the first digest and the second digest are equivalent (column 18, lines 47-62, e.g. the winner object and the non-winner object have the same attached object).

13. In regard to claim 9, Shakib discloses if the first fence value is equal to the second fence value, comparing the first meta-data with the second meta-data to determine whether the content on the second member should be changed (column 16, lines 1-67, e.g. determines which of the attached objects should be kept and which should be deleted).

11. In regard to claim 9, Shakib discloses each of the first fence value and the second fence value is assigned to a portion of content on its respective member of the replica set (column 20, lines 1-22, e.g. A8 and D6).

14. In regard to claims 34-42, Shakib disclosed the claimed method as cited above.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

Art Unit: 2168

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claims 16-23, and 31-33 are rejected under 35 U.S.C. 103(a) as being obvious over Shakib et al. (US 5787262 A) (Shakib hereafter) in view of Gamache et al. (US 6,938,084 B2) (Gamache hereafter).

18. The applied reference (Gamache) has a common assignee, Microsoft Corporation, with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

MOTIVATION TO COMBINE

19. Shakib discloses a method and system for distributed conflict resolution between different versions of the same data object which are replicated across a computer network (Abstract) without substantially increasing the communication traffic on the network (column 3, lines 10-13). Gamache describes a “quorum replica set algorithm brings members online and offline with data consistency, including updating unreconciled replica members, and ensures consistent read and update operations.” An artisan of ordinary skill in the art at the time of the instant invention would have been motivated by Shakib to provide an improved method with the use quorum replica set algorithm to ensure consistent read and update operations of Gamache without substantially increasing the communication traffic on the network.

PRIOR ART

20. A computer storage media storing computer-executable instructions that when executed perform a method comprising: each resource associated with a fence value, meta-data and content, each meta-data including one or more fields that are updated whenever the content of the associated resource is changed (column 16, lines 1-67, e.g. the change number of the winner copy is A8) and each fence value indicating whether its associated resource should be used to update a resource on another machine, the fence value having precedence over the meta-data (column 16, lines 1-67, e.g. determines which of the attached objects should be kept and which should be deleted); and updating the second resource from the first resource based on the fence value of the first resource having precedence over the fence value of the second resource, and maintaining the fence value of the first resource and the fence value of

the second resource unchanged (column 16, lines 23-30, e.g. D6, and column 20, lines 1-22, e.g. the change list has been changed by deleting the redundancy and the change number D6 remains unchanged).

21. However, Shakib does not describe “determining whether a first resource residing on a first machine should be used to update a second resource residing on a second machine...” or “preventing propagation from the second machine...” Gamache describes the “determining whether a first resource residing on a first machine should be used to update a second resource residing on a second machine...” (column 24, line 59, to column 25, line 12, especially, “Once a leader is selected, the recovery process continues...to propagate any needed records from the leader to other replicas...”). Gamache describes “preventing propagation from the second machine...” (column 25, lines 2-5, especially, then no propagation of records...is needed..”). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make and use the computer storage media of Shakib with the determining and updating described by Gamache to ensure consistent read and update operations without substantially increasing the communication traffic on the network.

22. In regard to claim 17, Shakib describes the claimed invention as cited above. Further, Gamache describes the limitation of “if the fence values of the first and second resources are equivalent, determining which machine will update the other based on the meta-data other the fence values (column 24, lines 63, “if two or more candidates replicas have the same sequence number, any one of those can serve as the leader replica...”). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make and

use the computer storage media of Shakib with the determining and updating described by Gamache to ensure consistent read and update operations without substantially increasing the communication traffic on the network.

23. In regard to claim 18, Shakib describes the claimed invention as cited above. Further, Gamache describes the limitation of a logical clock indicating the last time the corresponding content was updated (column 17, lines 6-13, especially, "time" column 24, lines 51-56, especially, "a last record", and Figure 1, Operating System 35 is well known in the art to comprise a clock). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make and use the computer storage media of Shakib with the determining and updating described by Gamache to ensure consistent read and update operations without substantially increasing the communication traffic on the network.

24. In regard to claim 19, Shakib describes the claimed invention as cited above. Further, Gamache describes the limitation of its corresponding resource may be propagated to other machines until another resource with a higher fence value is located on another machine (column 24, line 59, to column 25, line 12, especially, "Once a leader is selected, the recovery process continues...to propagate any needed records from the leader to other replicas..."). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make and use the computer storage media of Shakib with the determining and updating described by Gamache to ensure consistent read and update operations without substantially increasing the communication traffic on the network.

25. In regard to claim 20, Shakib in view of Gamache describes the claimed invention as cited above. Further, Shakib describes the meta-data associated with the first resource is

stored in a separate data structure from its corresponding source (column 20, lines 1-22, e.g. D6).

26. In regard to claims 21 and 22, Shakib describes the claimed invention as cited above.

Further, Gamache describes the limitation of the data structure is corrupted or deleted (column 18, lines 9-10, especially, "failed replica member is removed...", further comprising rebuilding the data structure (column 17, lines 58-59, "a recovery process") and decrementing the fence value associated with the first resource (column 26, lines 31-59, especially, "the recovery process fails...a count of the number of available replicas is decremented"). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make and use the computer storage media of Shakib with the determining and updating described by Gamache to ensure consistent read and update operations without substantially increasing the communication traffic on the network.

27. In regard to claims 23 and 31-33, Williams in view of Gamache describes the claims as cited above. Further, Gamache describes the limitation of "the first set of resources is loaded from a backup..." (column 2, line 59, to column 3, line 18, especially, "a recovery process...reconciles the states of the available members by propagating the data of that most up-to-date replica member to the other replica members set"). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make and use the computer storage media of Shakib with the determining and updating described by Gamache to ensure consistent read and update operations without substantially increasing the communication traffic on the network.

CONCLUSION

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

29. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

30. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to

Art Unit: 2168

confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

31. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199. The USPTO's official fax number is 571-272-8300.

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Dune Ly, whose telephone number is (571) 272-0716. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

33. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo, can be reached on (571) 272-3642.

/Cheyne D Ly/
C. Dune Ly
Patent Examiner
17/02/2008